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olivaceo.—In locis graminosis, circa Lehigh University, Bethlehem, Pa. E. A. Rau, Oct. 24, 1882.

The photographs of this new *Phallus* were made by Dr. C. L. Lochman, Bethlehem, who has for several years past made excellent photographs of a number of the most important indigenous and exotic medicinal plants.—EUGENE A. RAU, *Bethlehem, Pa.*

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### Notes on Fresh-Water Algæ.

In relation to species of Algæ which produce what the Germans call "wasser-blüthe," or, in less poetical English, a scum on the surface of bodies of water which serve as water-supplies, there has of late been felt a great interest on the part of the public, and in this connection I would call attention to some interesting forms found in Minnesota last summer by Prof. J. C. Arthur. The two scum plants, so common in the Eastern States, *Clathrocystis æruginosa*, Henfrey, and *Cœlosphærium Kuetzingianum*, Näg., appear to be also common in the West and were found by Prof. Arthur in Lake Satakah and Lake Tetonka, at Waterville, Minn.; and the first-named species was also found by Prof. Wm. Trelease in Lake Mendota, Wis. Consequently, as the West becomes more thickly settled we may expect to hear of the same disagreeable pig-pen odor which is found in Eastern water-supplies during hot summers.

Prof. Arthur also detected an interesting alga floating on Lake Tetonka, Waterville, and Lake Phalen, near St. Paul, which has not as yet been found in Eastern water-supplies. The alga in question resembles *Rivularia atra*, Roth, but is of softer consistency and the filaments have a different micrometric measurement. The species of *Rivularia* grow attached to other plants, sticks, stones, etc., and although they at length become free, they are then found resting loosely on the bottom and not forming a scum on the surface of the water. In *Hedwigia*, Jan., 1878, Cohn described a *Rivularia* which he called *R. fluitans*, which formed a "wasser-blüthe" on the river Leba, near Lauenberg, in Pomerania; and in *Hedwigia*, March, 1878, Gohi mentioned the occurrence of a similar *Rivularia* at Udrias, on the Gulf of Finland, to which he gave the name of *R. flos-aquæ*; but in *Hedwigia*, April, 1878, he stated that his plant was of the same species as that of Cohn. The *Rivularia* collected by Prof. Arthur in all essential respects seemed to me to be the same species

as that collected by Cohn and Gohi, and on sending a specimen to the last-named botanist he confirmed the correctness of the diagnosis.

Mixed with the Minnesota Algæ named above were fragments of an *Anabaena*, which appeared to be the form commonly known as *A. Flos-aquæ*, var. *circinalis*, and also traces of a larger *Anabaena*, the species of which could not be made out. In the Boston water works at South Framingham, Mass., *Anabaena gigantea*, Wood, was found in small quantity in the early part of November, 1882. I would also record the discovery of *Nostochopsis lobata*, Wood, by Messrs. E. Faxon and F. H. Hosford, at Ferrisburg, Vt., where it was comparatively abundant and formed expansions of several inches in water-courses. The occurrence of *Sphæroplœa annulina* should be recorded in California, where it was collected by Mrs. Austin near San Bernardino.—W. G. FARLOW.

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### General Conditions of Spontaneous Protoplasmic Movement.

Dr. Chas. S. Dolley, of Rochester, N. Y., has just translated Th. W. Engelmann's paper upon the "Physiology of Protoplasmic Motion," which has attracted so much attention. The following are the general statements under the above caption:

1. TEMPERATURE.—For all contractile protoplasm there is a higher and a lower temperature at which the spontaneous movements cease under all circumstances. The minimum lies mostly in the neighborhood of  $0^{\circ}$ , the maximum generally about  $40^{\circ}$ (C).

2. HYGROSCOPICITY.—In regard to this it is the same as regarding the temperature. There is, for all protoplasm, a maximum and minimum capacity for the inhibition of water. Close determination is wanting, yet the minimum may average below 60 per cent., and the maximum over 90 per cent. Within these limits the energy of the movements increases in general with the amount of contained water, with a corresponding increase of volume, and diminution of the refractive coefficient. Rapid change in concentration of the medium, causing rapid swelling, or more specially shriveling, acts in a manner similar to irritants.

3. OXYGEN.—Protoplasmic motion is undoubtedly able to continue in a medium entirely free from oxygen, but for a short time only, at the most, some hours. The gradual stagnation can at first be overcome by the introduction of oxygen, and by this means alone.